

IN THE CLAIMS:

A complete listing of the claims and their status as of this Amendment is as follows:

Claim 1 (currently amended): A method of forming high-molecular polymers starting from gel-forming water-insoluble polymers ~~of the acrylic type~~, comprising the steps of:

- a): dissolving an amount of at least one initiator-modifier compound of the general formula of one of EHaO , EHaO_2 , EHaO_3 or EHaO_4 , wherein E ~~comprises~~ consists of one of hydrogen, an alkali metal or an alkali earth metal and Ha comprises consists of halogen, in an aqueous solution at a starting temperature;
- b): adding a gel-forming water insoluble polymer to the solution and mixing it therewith to form macro-aggregates from the polymers; and
- c): modifying the macro-aggregates by at least one of heating and or irradiation to form water-soluble high-molecular polymers.

Claim 2 (currently amended): The method of claim 1, wherein modification of the macro-aggregates by heating further comprises increasing the temperature of the solution steadily or in intervals from the starting temperature to an elevated aging temperature for a pre-determined time period.

Claim 3 (previously presented): The method of claim 1, further comprising the step of adding a reducing agent to the solution for the removal of excess initiator-modifier compound.

Claim 4 (canceled):

Claim 5 (currently amended): The method of claim 1, further comprising selecting the initiator-modifier compound from the group consisting of at least one of CaOCl_2 , ozone, peroxide compounds E_2O_2 and ammonium peroxydisulfate.

Claim 6 (currently amended): The method of claim 1, further comprising generating the initiator-modifier compound 'in situ' by adding precursor compounds or educts for forming 'in situ' substances of the ~~general~~ formula of one of the group ~~comprising~~ consisting of one of EHaO , EHaO_2 , EHaO_3 or EHaO_4 wherein:

E ~~comprises~~ consists of at least one of hydrogen, an alkali metal or an alkali earth metal; and

Ha ~~comprises~~ consists of a halogen.

Claim 7 (currently amended): The method of claim 1, further comprising determining the concentration of the initiator-modifier compound according to a concentration of active oxygen.

Claim 8 (currently amended): The method of claim 7, further comprising preparing the concentration $[(\text{I}) \text{ by weight } (\text{I})]$ of the initiator-modifier compound to be between 0.05 and 20.0% of the polymer mass to be modified.

Claim 9 (previously presented): The method of claim 7, further comprising preparing the concentration of the initiator-modifier compound to be between 0.1 and 10%, preferably between 0.3 and 5%, and most preferably between 0.5 and 1.0% of the polymer mass to be modified.

Claim 10 (previously presented): The method of claim 1, further comprising adding the polymer in solid form.

Claim 11 (previously presented): The method of claim 10, further comprising adding the polymer to the reaction solution in a granulated form.

Claim 12 (previously presented): The method of claim 11, further comprising selecting the polymer composed of particles with a mean diameter of maximum 400 μm , preferably maximum 200 μm , and most preferably maximum 150 μm .

Claim 13 (currently amended): The method of claim 1, further comprising forming a reaction mixture of water and ~~adding an amount of~~ an alkaline compound for forming an alkaline solution that is less than 10% per weight of the reaction mixture.

Claim 14 (previously presented): The method of claim 1, further comprising allowing dissolution of the initiator-modifier compound in a temperature range between 0 and 50 °C.

Claim 15 (previously presented): The method of claim 1, further comprising adding the polymer within 20 minutes.

Claim 16 (currently amended): The method of claim 1, wherein the polymers to be modified are selected from ~~further comprising selecting the polymers to be modified~~ as hydrophilic superabsorbent polymers that are copolymers of superabsorbents on a base of an acrylic acid.

Claim 17 (currently amended): The method of claim 1, further comprising selecting the ~~concentration~~ amount of polymer in a reaction mixture is to be between 0,4% 0.1% and 50.0% per of a weight of the reaction mixture.

Claim 18 (previously presented): The method of claim 1, further comprising maintaining the pH of the reaction solution between 5 and 14.

Claim 19 (previously presented): The method of claim 1, further comprising aging the resulting reaction at an aging temperature of 20 to 50 °C for at least 1 hour.

Claim 20 (currently amended): The method of claim 1, further comprising irradiating the reaction mixture by electromagnetic radiation ~~comprising~~ consisting of at least one of daylight, UV-light, penetrating (γ) and X-ray radiation.

Claim 21 (previously presented): The method of claim 1, further comprising agitating or stirring the reaction mixture vigorously during and after the addition of the gel-forming water insoluble polymer.

Claim 22 (currently amended): A high molecular mass acrylic polymer formed by the steps comprising:

dissolving an amount of at least one initiator-modifier compound of the general formula of one of EHaO , EHaO_2 , EHaO_3 or EHaO_4 , wherein E ~~comprises~~ consists of one of hydrogen, an alkali metal or an alkali earth metal and Ha comprises consists of halogen, in an aqueous solution at a starting temperature;

adding a gel-forming water insoluble polymer to the solution and mixing it therewith to form macro-aggregates from the polymers; and

modifying the macro-aggregates by ~~at least~~ one of heating and or irradiation to form water-soluble high-molecular polymers.

Claim 23 (previously presented): The acrylic polymer of claim 22, wherein the average molecular weight is between 0.2×10^6 and 15×10^6 a.u.

Claim 24 (canceled)

Claim 25 (currently amended): The acrylic polymer of claim 22, further comprising adding a reducing agent for removing excess initiator-modifier compound.

Claim 26 (currently amended): The acrylic polymer of claim 22, wherein the initiator-modifier compound is selected from the group ~~comprising~~ consisting of at least one of CaOCl_2 , ozone, peroxide compounds E_2O_2 (E_2O_2); and ammonium peroxydisulfate.

Claim 27 (currently amended): The acrylic polymer of claim 22, wherein the concentration of the initiator-modifier compound is determined according to a concentration of active oxygen.

Claim 28 (previously presented): The acrylic polymer of claim 22, wherein the concentration by weight of the initiator-modifier compound is approximately between 0.05 and 20.0% of the polymer mass to be modified.

Claim 29 (previously presented): The acrylic polymer of claim 22, wherein the polymer is comprised of particles with a mean diameter maximum of approximately 400 μm .

Claim 30 (currently amended): The acrylic polymer of claim 22, ~~wherein an amount of further comprising forming an alkaline solution from an~~ alkaline compound for ~~forming an, wherein said alkaline compound~~ solution is less than 10% per weight ~~of the alkaline solution.~~

Claim 31 (previously presented): The acrylic polymer of claim 22, wherein the polymers to be modified are hydrophilic superabsorbents.

Claim 32 (currently amended): The acrylic polymer of claim 22, ~~further comprising forming a reaction mixture,~~ wherein the concentration of polymer in a ~~the~~ reaction mixture is between approximately 0.1% and 50.0% per weight ~~of the reaction mixture.~~